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BULLETIN
OF THE
TORREY BOTANICAL CLUB.

Vol. XI.] New York, June, 1884. **[No. 6.**

New Species of Grasses.

By GEO. VASEY.

PANICUM CHAPMANI.—Culms tufted, 1 to 3 feet high, erect, slender, smooth, mostly simple ; leaves chiefly radical, often 1 foot or more in length, 1 to 2 lines wide, firm, often involute when dry, the sheaths narrow, shorter than the internodes of the culm, smooth, finely striate, sparingly ciliate on the margins; ligule a short ciliate ring; blade 6 to 12 inches long, attenuate-pointed, scabrous above, slightly ciliate below. Panicle 6 to 12 inches long, narrow, racemose, composed of 8 to 10 sessile spikes, which are approximate toward the apex, gradually becoming 1 to 2 inches distant, appressed, the upper ones about one-half inch long, the lower ones 1 inch or more, containing from 3 to 12 spikelets; the rhachis flexuous, triquetrous, scabrous, and terminated by a short bristle; there are frequently 1 to 3 secondary racemes from lateral peduncles, which are sometimes nearly as long as the terminal one. Spikelets 1 line long, first glume broad, obtuse, one-quarter or one-third as long as the spikelet, second glume 7-nerved, as long as the flower, third glume 5-nerved, slightly exceeding the flower; flowering-glume ovate, acutish, finely striate; palet of equal length with its glume.

This is the *Panicum tenuiculmum* of Chapman's Flora, but is not the *P. tenuiculmum* of Meyer, and I am unable to find it described. It is dedicated to the esteemed author of the Flora of the Southern States.

PANICUM HALLII.—Culms cæspitose, 1 to 2 feet high, erect, smooth, simple or sparingly branched, each with about 4 light green, striate leaves, which are 3 to 6 inches long, and 2 to 3 lines wide; ligule a ciliate ring; sheaths smooth or somewhat pubescent. Panicle 4 to 6 inches long, the branches erect spreading, mostly single, alternate and few flowered, the lower one 3 or 4 inches long and subdivided, naked below; the rhachis smoothish, pedicels about as long as the spikelets. Spikelets about one and one-half lines long, acute or acutish, very smooth, first glume broadly ovate, acutish, half as long as the spikelet, second glume ovate lanceolate, acute, 9-nerved, one-quarter to one-third longer than the fertile flower, third glume (that of the sterile flower) 7- to 9-nerved, acute, equal to the second, and enclosing a palet half as long; flowering-glume a line long, oblong, obtuse, smooth and shining.

This is number 816 of E. Hall's Texas collection, distributed as *P. giganteum*, Scheele. It has since frequently been collected in Texas and New Mexico. The spikelets resemble those of *P. virgatum*.

The panicle resembles that of *P. proliferum*, but is a distinct and good species, to which I give the name of its earliest collector, the late Mr. E. Hall.

The May Apple (*Podophyllum*) presents several peculiarities in its development which are so interesting as to merit an explanation. The non-flowering-stem of this plant bears but one leaf, while the flowering-stem bears two leaves, the flower being between them. A section of the base of the flowering-stem reveals nothing peculiar, it is merely a continuation of the rootstock (Fig. 1). The section of the base of the non-flowering-stem, however, reveals a bud, which represents the continuation of the root-stock (Fig. 2). A careful examination shows a small slit at one side of the bud by means of which it has access to the air (Fig. 4) and a cross-section shows that it is formed by the overlapping of the two edges of the stem about the bud (Fig. 5). In a logitudinal section I find the bud-cavity to be placed quite near to the margin of the stem (Fig. 6). Upon examining the older nodes of the rootstock I find undeveloped buds (Fig. 7.) which are placed quite near to the margin of a scar which is pitted like a leaf-scar. In fact, the non-flowering-stem of the May-apple is only a leaf, the base of whose petiole encloses a bud. When two such leaves arise, as is not unfrequent, the bud is enclosed by the base of the inner, second leaf. As a rule, the life of *Podophyllum peltatum* is prolonged by the development of axillary buds into branches (Figs. 1, 2, 7, 8, *a*), because the terminal flowering-stem perishes and the terminal buds of non-flowering stems rarely develop (Fig. 7, *b*). In one abnormal specimen found, a lateral bud divided at its tips, neither branch being axillary to the other (Fig. 3). And here I would state what appears to me a remarkable fact: while the

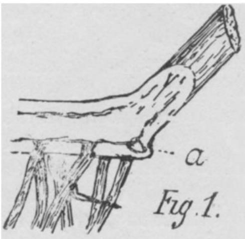

Fig. 1.

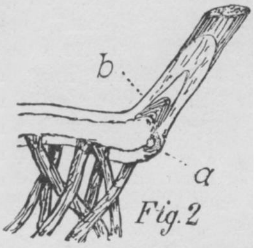

Fig. 2

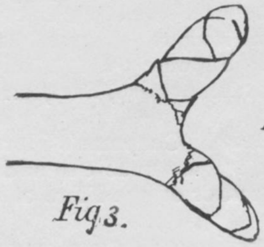

Fig. 3.

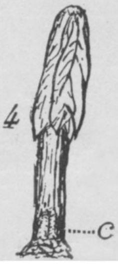

Fig. 4